Claims

1. Layer succession wherein the layer succession features one or several layers by use of TBAs sources and/or TBP sources by means of commonly known expitaxy methods.

2. Layer succession according to claim 1 wherein the at least one layer is realized as a strain-compensating layer for surrounding layer(s) of the semiconductor device.

3. Layer succession according to claim 1 and 2 wherein the one or several layers are arranged in the active region of the device.

4. Layer succession according to claim 1 to 3 wherein at least one of the layers is arranged in the area of the semiconductor layers realized as a reflector or one or multiple layer mirror.

5. Optically pumped semiconductor devices for the production of radiation wherein the semiconductor device features one or several of the layer successions according to claims 1 to 4.

6. Semiconductor device according to claim 5 wherein the device features at least one quantum well package which features one or two quantum films.

7. A method for the production of semiconductor layer structures wherein for the achievement of a strain control of one or several layers, TBAs sources or/and TBP sources, preferably tertiarybutylarsine (t-C4H9AsH2) or tertiarybutylphosphine (t-C4H9PH2, TBP) or sources featuring corresponding arsenic alkyl and alkylphosphine compounds, are used in the commonly known epitaxy methods.

8. Method according to claim 5 wherein MOVEPE or other deep temperature vapor phase expitaxy methods are used at a temperature of equal to or less than 600°C.

9. Use of TBAs sources or/and TBP sources, preferably tertiarybutylarsine (t-C4H9AsH2) or tertiarybutylphosphine (t-C4H9PH2, TBP) or corresponding arsenic alkyl and alkylphosphine compounds in expitaxy methods for the production of tension compensating semiconductor layers.

10. Use according to claim 9 wherein compression-strained semiconductor layers are compensated for their strain.

Summary

A new method for the production of strain-compensating semiconductor layers is suggested, as well as its use for the production of strained-controlled semiconductor layer systems and the production of optically pumped semiconductor devices for the production of radiation, preferably long-wave radiation.